Gliding on the winds of change

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Chapter 8

Viewpoint: Money can't buy me love for teaching

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Abstract

The modern paradigm of competency-based medical education (CBME) has been embraced all over the world. This viewpoint shares the plan of action developed by the Dutch government to implement CBME in practice. Among other things, this plan included the instalment of an advisory board, a consensus model on requirements for CBME, the introduction of an educational fund, faculty development programs, and government funded projects to support the implementation of CBME. The availability of generous resources and training was intended to positively affect the rate of adoption of CBME. Indeed, there are teaching sites with highly motivated faculty who bring CBME to life in daily practice. However, the application of CBME seems to depend largely on personal values and intrinsic motivation for teaching. Furthermore, research in multiple settings shows that including generic competencies in formal entrustment decisions is still not a common practice and faculty struggle to find the right balance between checking on their residents and trusting them. Additionally, clinical teaching teams feel rather unequipped to implement change due to a lack of knowledge and skills in change management. Therefore, future faculty development programs should pay attention to change management as well. This Dutch case demonstrates that establishing change is a continuous search for the right balance between creating enough extrinsic motivation, such as financial incentives, as well as trusting on and encouraging the intrinsic motivation of those involved.

Reading guide

In this viewpoint, a thorough description of the introduction of competency-based medical education (CBME) in the Netherlands is presented. First, the main concepts of CBME, and its' implications for practice as well as the implementation process are described. Second, the steps taken by the Dutch government to support and facilitate the implementation of CBME are outlined. Subsequently, insights and experiences from multiple settings are shared. This is followed by extensive reflections on the implementation process from both a general as well as a change management perspective. Lastly, lessons learned from this process as well as implications for the future are described.

Competency-based medical education

The modern paradigm of competency-based medical education (CBME) has been embraced all over the world and aims to improve patient care by enhancing postgraduate medical education (1). The introduction of CBME should lead to more transparency and accountability to the public about the content and quality of postgraduate curricula (2–4). Competency frameworks, such as the seven roles from the Canadian Medical Educational Directives for Specialists (CanMEDS) and the Accreditation Counsel for Graduate Medical Education competencies, describe competencies as a set of abilities needed for all domains of medical practice (5,6). Examples of these competencies are patient-centered communication, collaboration, leadership, professionalism, system based practice, and practice-based learning (5,6). While in training, trainees progress through a series of educational stages. Each stage is defined by specific competencies a trainee is expected to obtain at that stage. Thereby, competency frameworks take an outcome-based approach (7). A key feature of CMBE is that it allows for a highly individualized learning process in which trainees could potentially achieve competency at different paces (1). When all competencies are obtained to a sufficient level, trainees can enter unsupervised practice (5,6).

Competency based medical education in practice

With a focus on outcomes or competencies, competency frameworks put more emphasis on assessment of these outcomes (7). Direct observation of trainees by faculty as they provide patient care is a key feature of work-based assessment and evaluation in CBME (8,9). Furthermore, greater faculty involvement is asked in terms of supervising individualized learning programs as well (4,7,9).

With competencies described as observable behaviours, faculty can provide enhanced formative feedback in order to guide a trainees learning more directly (2,8). With sustained observation, faculty can gain an informed idea of a trainee's level of competence and subsequently determine the level of entrustment given to each individual trainee (8,10). But learning is a collaborative process between a trainee and faculty. This means that trainees also have to be active learners by e.g., self-reflecting, self-assessing, taking responsibility in determining a learning plan as well as actively seeking input about their performance (8).

Information technology, e.g. the use of a portfolio, can be used to make assessment more time efficient. Additionally, it can facilitate the transfer of information about a trainee's performance, within one clinical setting as well as from one clinical rotation to the next, in order to stay focused on a trainee's continuous improvement (10). In order to smoothen the translation of competencies into clinical practice, Entrustable Professional Activities (EPAs) were introduced (11). Registering a trainee's

developing proficiency will be crucial to show accountability for achieving the defined competencies as well as to enable a flexible duration of training to become reality (2,12).

It goes without saying that the introduction of CBME had clear implications for the workplace. And that the implementation of CBME is no clear road to victory has been no surprise (2,13–15). In the discourse about the implementation of CBME, the role of time and money has been the most frequently discussed (2,7,16–18). In daily practice, CBME requires more time for individualized training by supervision and assessment, reducing clinical practice time in an already time-constrained environment (7). In other words, this time cannot be utilized to provide clinical service, and thereby to generate income. Furthermore, specialty training involves work-based learning in which training and the provision of healthcare are closely intertwined (19). As a result, in the time-based educational frameworks that have been in place, teaching institutions have been dependent on trainees in delivering clinical service (7,16). In a competency-based framework, the flexible duration of training might jeopardize continuity in delivering clinical service (16,17).

Furthermore, the implementation itself will require time and effort from those involved as well. For the successful implementation of the new paradigm of CBME, it is essential that all faculty and trainees understand what is expected. Faculty must be prepared to perform direct observation in a reliable fashion and subsequently deliver reliable evaluations of what they have observed (2,8). They need training in order to become competent themselves to perform these assessments and to be able to function as role models based on the criteria of CBME (8). Additionally, for the enhanced informed judgements, faculty must learn to use group processes to make entrustment decisions (16). This has raised the question whether compensation, such as financial compensation or promotion, should be considered in order to provide faculty with an adequate incentive for their commitment to dedicating sufficient time for this task (2,10,12).

The Dutch case: modernisation of postgraduate medical training in the Netherlands

In 2003, the Dutch legislative body for accreditation of postgraduate medical education (PGME) decided to reform PGME in response to issues such as social accountability and transparency (12). Legislation has formalized that all PGME programs need to adopt the seven roles of the CanMEDS (12). In 2006, the Dutch Advisory Board for Postgraduate Curriculum Development (DAPCD) was installed, supported by governmental bodies. Together with all specialty societies, the DAPCD developed a consensus model on requirements for competency based medical education and assessment (12). In practice, this meant that all medical societies had to adjust their national specialty specific curriculum according to this consensus model. For the accreditation of the local training sites, local teaching hospitals were required to develop site-specific as well as specialty specific training plans, in which the national curriculum was locally operationalized.

Educational fund

In order to minimize the influence of time and money on the implementation of the new requirements the government decided to take precautionary measures. In 2007, the Dutch ministry of Health installed a formal fund to reimburse the cost price of specialty training. The main principle underlying this fund is that if the costs of delivering healthcare are higher than the revenues due to teaching activities, this would be compensated in order to provide a level playing field for all health care institutions. By doing so, market forces would not be influenced by whether or not a hospital is a teaching institution (20). Furthermore, by disconnecting educational costs from healthcare costs, this fund ensured that teaching would be decently remunerated, which should create opportunities for optimal training and should ease the adherence to the new regulations and acceptance of the accountability to society.

The compensation given, which was approximately 150.000 euro (around 165.000 dollar) per trainee per year, covered both fixed costs, e.g. salaries and employer's costs, as well as variable costs (20,21). Variable costs include costs generated as a result of faculty supervising trainees. Time that is allocated to supervision cannot, or not as efficiently, be used for clinical service. Another example of variable costs are costs related to an inefficient use of infrastructure due to, for instance, the extra time that a trainee requires to perform a certain activity or procedure (20–22).

Translating theory to practice

With the help of the DCACD, the consensus model on CBME was translated into practice. Among other things, the DCACD advised specialty societies on how to

structure the content of their curriculum across rotations, how to increase the value of feedback as well as how to assess theoretical knowledge. The authorship of the new curricula was placed on curriculum design groups in each of the specialty societies (12). EPAs were used to decide what activities should be the core of a specialty and therefore required specific educational attention (12,23).

Faculty development

In order for supervisors to become good role models, they themselves need to be aware of the philosophy of CBME as well as expand their proficiency in the different CanMEDS roles. Therefore, extensive faculty development programs aiming at didactical insight and use of proper feedback were made available with financial support of the Dutch Ministry of Health in 2010 (12,13).

Communities of learners

Furthermore, communities of learners, consisting out of both supervisors and trainees, were established to support the exchange of ideas and best practices and to share accountability for a transparent learning process. This exchange revealed that many considered it particularly challenging to translate generic competencies into everyday teaching and learning objectives. In 2011, this challenge was met by yet another government-funded project, in order to support the translation of generic competencies into recognizable learning and teaching opportunities. Current teaching activities were analysed in order for faculty and trainees to recognize the implicit attention to generic competencies already present, and thereby to help them pay more explicit attention to these competencies. Furthermore, competency development was linked to relevant themes in society such as elderly care, patient safety, and health care efficiency (24).

In summary, for over a decade, the Dutch Ministry of Health invested extensively in order to ensure a successful transition to CBME. With the introduction of the educational fund as well as government-funded projects and structures you could even say that money was no issue at all. But did this investment indeed lead to a successful transition? Were the barriers for the implementation of CBME indeed reduced? Does the accountability to society become evident in transparent formal entrustment decisions?

Reflections on the Dutch case: Do we see CBME in practice?

On paper, we have created the optimal circumstances for CBME to become successful in the Netherlands. We wrote state of the art curricula, ensured proper funding and provided faculty development. Above all, costs were no issue. So, what did all this bring about?

Generally speaking, it can be concluded that CBME is seen as a valuable innovation. It meets the needs in PGME and is therefore accepted as the new educational paradigm (25,26). Medical students, trainees, and faculty acknowledge the importance of workplace-based assessment (27,28), general competencies (26,29,30), and the holistic approach of EPAs (30,31). There are teaching sites with highly motivated faculty who bring CBME to life in daily practice by exemplary use of feedback and assessment to build a portfolio and by motivating residents to achieve excellence and extend their level of entrustment. However, conversations with these successful groups, suggest that their teaching is merely based on passion and professional pride and that the funding is merely supportive (13).

The question remains whether CBME really has been institutionalized. In a recent study, van Loon et al. (32) examined to what extent generic competencies are included in entrustment decisions. To answer this question, the written arguments for entrustment decisions regarding the care around a caesarean section were retrieved from the electronic portfolios of all Dutch Obstetrics and Gynaecology trainees. Years after the introduction of CBME, you would expect to find that each entrustment decision would routinely be supported by careful written arguments accounting for a trainee's independent performance. However, it turned out that the main focus of entrustment decisions was the number of times a procedure was performed rather than the quality of this performance. Furthermore, only 0.5% of the written cases for entrustment included generic competencies (32).

In a subsequent study by van Loon et al. (30), again it was shown that the attention to nontechnical skills is still rather limited in entrustment decisions. Faculty mentioned they are not used to taking these elements into account. Furthermore, faculty and residents explained that generic competencies are often discussed during entrustment decision making, but rarely written down. In practice, faculty preferred informal entrustment to facilitate their decisions on independence levels during daily practice because it can be reconsidered. Faculty mainly used formal entrustment as a way to give feedback on a trainees' progress related to technical skills. This way of working could limit the generalizability of entrustment decisions to other clinical settings and thereby reduce its potential value. For instance, it may create situations in which trainees have different independence levels depending on who is supervising them (30).

Indeed, making a transparent written case for a formal entrustment decision has been perceived as mere bureaucracy, regarded as too time-consuming, and therefore considered a problem for the daily workflow (14,18,27,28). The sense that there is a lot of red tape involved in the assessment of trainees can also be recognized in the international literature in which CBME has been called a 'tick-box' approach to medical education (16,33). However, the ability to look at a trainee on a metalevel and extrapolate the observed performance to a trainees' overall integrated competence, requires from faculty that they understand this involves more than just 'ticking a box'. It requires reliable multi-dimensional assessment at multiple occasions and a robust system for collecting, analysing and acting on this information (7,8). Only then it is possible to truly individualize training programs.

In line with the paradigm of CBME, this should subsequently lead to a flexible duration of training programs. What we have seen in the Netherlands, is that individual training programs are indeed adjusted to a trainee's level of competence. However, Van Rossum et al. showed that nearly all training trajectories were adjusted at the start of training rather than along the way (14). In other words, training programs are individualized based on competencies acquired before specialty training started rather than during training itself. One could question whether this way of individualizing training programs still aligns with the fundamental features of CBME as the training programs remain rather fixed throughout the training period. On the other hand, this situation raises the question whether the amount of flexibility asked from teaching departments is indeed achievable in the light of their wish to maintain continuity in clinical service and work schedules. Not surprisingly, this hampered the implementation of a flexible training schedule (14,17). By the current way of adjusting training programs, the impact on the planning of individual departments is limited and thereby has become less of a barrier to the implementation of CBME.

During the implementation process, the role of time in CBME came forward as a possible barrier to implementation as well (14,18,34). Van Rossum et al. (14) showed that time allocation has always been a daily struggle for faculty, even before the introduction of CBME. Faculty is torn between multiple responsibilities such as teaching, research, management tasks and clinical service. The increased emphasis on the direct observation of trainees only aggravated this problem. Furthermore, in order to alter a working style, changes need to happen in work habits. Time constraints could subvert change efforts and make it easier to stick to old habits thereby hampering the implementation of direct observation (18).

Whether or not direct observation is initiated is also influenced by current believes and emotions related to the training relationship. Research in postgraduate general practice training showed that supervisors are struggling to find the right balance

between checking on their residents and trusting them (34). Supervisors expressed they are afraid trainees might feel mistrusted when they would initiate direct observation. This is especially the case when they want to observe basic skills trainees are expected to have, such as physical examinations, rather than while learning something new. Additionally, they found it difficult to impose direct observation on trainees who did not ask for it or even avoided it. From a trainees' perspective, CBME puts an emphasis on learning as a collaborative process in which trainees also actively seek input about their performance (7). For trainees, capabilities to self-manage their training needs as well as to engage in pro-active behaviour are crucial to become the active learner that makes the most of a CBME-based training program (14).

Regardless of the underlying reasons, the challenges in reaching the full potential of CBME also complicate improving the level of transparency concerning the quality of PGME. Especially perceptions of bureaucracy seem to limit the motivation to make a transparent written case for a formal entrustment decision. This accountability to society is important as medical education is paid for with public money through government funding. Ideally, the need to show societal accountability should reach even further and also endorse medical professionals to be critical about their work habits and challenge the status quo from the perspective of social responsibility for the governance of care (13,35).

Strategy for change

Based on the diffusion of innovation theory by Rogers (36), the availability of generous resources and training was intended to positively affect the rate of adoption of CBME. Rogers describes five innovation attributes that are important for a rapid diffusion of change; i.e. relative advantage, compatibility, complexity, trialability, and observability.

The first, relative advantage, is defined as "the degree to which an innovation is perceived as being better than the idea it supersedes" (36). The relative advantage could become apparent in practical implications but also in social status, convenience and satisfaction. According to Rogers, direct or indirect financial incentives may increase the effectiveness of this particular attribute and thereby help to increase the rate of adoption of an innovation.

As described earlier, the Dutch government very generously supported the transition to CBME financially. The second, compatibility, reflects "the degree to which an innovation is perceived as consistent with the existing values, past experiences, and needs of potential adopters" (36). This attribute relates to the social system in which an individual operates. In this case, communities of learners were established in order to exchange ideas and facilitate the development of a shared mental model. Thirdly, complexity, reflects "the degree to which an innovation is perceived as relatively

difficult to understand and use" (36). In order to reduce the perceived complexity of CBME, faculty was involved in the development of the new training programs as the authorship of these programs was placed on curriculum design groups in each of the specialty societies (12). Additionally, the Dutch Advisory Board for Postgraduate Curriculum Development was available to help with translating CBME into practice and faculty development programs were introduced (12). Fourthly, trialability, is "the degree to which an innovation may be experimented with on a limited basis" (36). In the process of adoption and implementation of an innovation, it can be adapted or re-invented. The rate of adoption depends on how well an innovation evolves to meet the needs of those involved. Within certain limits, each local site was provided with some room for trialability, creativity and professional enterprise in re-inventing site-specific ways to deal with CBME. For example, the National curriculum for Obstetrics and Gynaecology prescribes the use of 'Entrustable Professional Activities' to support the progressive independence of the trainees and indicates which assessment methods should be used. However, it does not prescribe in detail the number of assessments and the type of procedures required for the entrustment decision itself (12). As described earlier, re-invention also played a role in the implementation of individualized training programs, which has led to adjustment of nearly all training trajectories at the start of training rather than along the way (14). Last but not least, observability is defined as "the degree to which the results of an innovation are visible to others" (36). Role modelling is a key factor for this attribute and as a consequence can act as a stimulus for change uptake by others. Therefore, the exemplary role of faculty has been enhanced by faculty development programs (12).

Overall, it can be concluded that a clear change management strategy was used by the National regulatory bodies. However, research looking into how clinical teaching teams implement curriculum change in their daily practice revealed that they felt rather unequipped to implement change due to a lack of knowledge and skills (18,25). Clinical teaching teams tend to take a strong pragmatic approach of just trying things and seeing what comes of it without really thinking through which possible steps of implementation they could take (18). This also might have hampered the translation of CBME into practice.

Lessons learned

What may be the lessons learned from these findings? *First of all, money can't buy me love for teaching.* Despite generous funding of training programs in the Netherlands, some changes may be noticed but it seems CBME has not been fully institutionalized yet. In the literature, some still argue that financial compensation should be considered (10). However, we find ourselves still looking for the adequate incentive to involve faculty in the CBME curricula. In our case, appropriate financial incentives proved not to be sufficient. Change has not been induced on the scale that we expected based on the amount of money that has been invested. *Secondly, faculty development programs are no guaranty the principles of CBME are indeed translated to practice.* Despite extensive programs for faculty development, the application of the acquired skills seems to largely depend on personal values, visions, and current habits. *Lastly, a change management strategy should have the right balance between strict instructions and the amount of leeway given.* Despite a clear change management strategy, it proved to be insufficient to bring about the desired teaching routines at local teaching sites. This might be explained by the fact that the strategy mainly focused on national overarching instructions that left room for interpretation on how these instructions should be operationalized locally. In principle, this definitely is an appropriate strategy if local teaching sites have the relevant knowledge and skills to make this translation. However, it became clear that clinical teaching teams lack knowledge of change strategies to support such an implementation process and as a result, could not optimally utilize the leeway that was given to them (25). Additionally, the intertwined systems for teaching, research and clinical service might have played a role as well because patient care is relatively leading in the way residency programs are executed (19).

Considerations for the future

From the perspective of the motivational theory of Herzberg (37), the first two lessons have come as no surprise; this theory suggests that intrinsic drivers outweigh financial inducement or rewards in their capability to motivate people. Herzberg argues that motivation is based on internal-generated drives such as a sense of achievement, recognition for achievement, responsibility and personal growth, rather than externally-stimulated incentives (37). One of the most important findings in his work was that factors involved in stimulating job satisfaction or motivation, when absent are not related to job dissatisfaction and vice versa. As a consequence, whereas inadequate financial rewards lead to job dissatisfaction, adequate financial rewards do not increase job satisfaction (37). In other words, money may be supportive but is not an effective motivator for, in this case, changes in the routines of clinical teaching. Indeed, Kogan et al recently showed that the higher the initial motivation of faculty towards committing

to their task, such as including more direct observation for trainees into daily practice, the more likely it was to be implemented (38).

Self-determination theory also qualifies autonomous motivation, motivation that let individuals do something out of personal interest, as the best quality motivation (39). As mentioned earlier, we also got the impression that whether faculty perform high quality teaching is merely based on their passion for teaching rather than financial inducements to do so. Additionally, a recent study showed that the combination of patient care and teaching was the most motivating factor in the work of Dutch faculty (40). In our opinion, this kind of motivation should only be endorsed. To stimulate autonomous or intrinsic motivation, three psychological needs need to be met, i.e. autonomy, perceived competence, and relatedness (39,40).

Autonomy refers to experiencing a sense of volition. On a minor scale this relates to having an influence on how individuals organize your work (40). Not surprisingly, time constraints could have a negative impact on the feeling of autonomy (40). However, in our opinion these insights should also be food for thought on how we value clinical teaching compared to doing research and patient care. Not only excellence in research should lead to promotion or tenure but clinical teaching should as well (2). A new balance should be sought between the importance of the dominant biomedical discourse and the discourse that aims at improved professional performance and education (13). By doing so, one can create more room for those who wish to excel in clinical teaching but are hesitant to do so because it has limit growth opportunities for one's career.

Attention should also be given to perceived competence, i.e. the improvement of skills (40), by means of faculty development. Increased pressures for accountability put an emphasis on direct evidence of assessment, i.e. formal entrustment decisions. The quality of these decisions is related to supervisor's competence of assessment (41). Supervisors need to develop a common professional judgement in order to ensure the quality of entrustment decisions, thereby taking responsibility for the accountability to society (30,41). For the development of such a common mental model single training sessions will not do, however, rather requires faculty development programs that facilitate long-term coaching, support and reflection on ones' own professional practice (41). The latter will also ensure faculty to become expert role models in the principles of CBME, which is necessary for trainees to optimally develop skills like self-assessment and self-reflection and to become active learners (8).

Looking at relatedness, van der Burgt et al. (40) also showed that interaction with colleagues and feelings of connectedness induce motivation for work. The formal leaders of change, usually program directors (18,25), must work together within and outside their own teaching hospital in order to share experiences and further build on

the same mental model.

For this purpose, all tools developed in the government funded projects and faculty development programs were made available online for universal use by local clinical teaching teams (42). Additionally, there lies a responsibility for all faculty and trainees involved in CBME. They should realize that any of them could be a change leader and they should share their enthusiasm for change, whether it is CBME or something else, among others who are less supportive or less familiar with CBME (10). Not surprisingly, the ability to lead change is part of the leadership role of the CanMEDS framework (5). The medical specialist of the future must be adaptable to change. In other words, change should be approached as a team effort. Indeed, Rogers also emphasizes the importance of diffusion as a social process that involves interpersonal communication in which people share information with one another in order to reach a mutual understanding (36).

Besides encouraging intrinsic motivation, attention should also be given to factors that could further smoothen the implementation processes. For instance, perceptions of bureaucracy, which are demotivating (40), could be addressed during faculty development programs by showing how to use the elements of CBME most efficiently and by making them valuable in local contexts (18). Furthermore, practical tools to implement change should be provided to clinical teaching teams. Therefore, faculty development should also focus on broader topics such as change management principles and teamwork in order to equip faculty with knowledge and tools to deal with implementing change as a team, now and in the future (7,18,25,36).

Conclusion

Despite the generous financial support of CBME training programs, the medical education community still faces ongoing challenges in reaching the full potential of CBME. This Dutch case demonstrates that establishing change is a continuous search for the right balance between creating enough extrinsic motivation, such as financial incentives, as well as trusting on and encouraging the intrinsic motivation of the stakeholders involved. We share this Dutch case for others to learn from and to inspire them to do the same. This is important so strengths are built upon and mistakes are not repeated.

References

1. Frenk J, Chen L, Bhutta Z, Cohen J, Crisp N, Evans T, et al. Health professionals for a new century: transforming education to strengthen health systems in an interdependent world. Lancet. 2010;376:1923–58.
2. Caverzagie KJ, Nousiainen MT, Ferguson PC, ten Cate O, Ross S, Harris KA, et al. Overarching challenges to the implementation of competency-based medical education. Med Teach. 2017;39(6):588–93.
3. Jones R, Higgs R, Angelis C de, Prideaux D. Changing face of medical curricula. Lancet. 2001;357:699–703.
4. Frank JR, Snell LS, Cate O Ten, Holmboe ES, Carraccio C, Swing SR, et al. Competency-based medical education: theory to practice. Med Teach. 2010;32(8):638–45.
5. Frank JR, Snell L, Sherbino J. CanMEDS 2015 Physician Competency Framework. Ottawa: Royal College of Physicians and Surgeons of Canada; 2015.
6. Holmboe ES, Edgar L, Hamstra S. The milestones guidebook. Chicago: Accreditation Council for Graduate Medical Education; 2016.
7. Taber S, Frank JR, Harris KA, Glasgow NJ, Iobst W, Talbot M. Identifying the policy implications of competency-based education. Med Teach. 2010;32(8):687–91.
8. Iobst WF, Sherbino J, Cate O Ten, Richardson DL, Dath D, Swing SR, et al. Competency-based medical education in postgraduate medical education. Med Teach. 2010;32(8):651–6.
9. Carraccio C, Wolfsthal SD, Englander R, Ferentz K, Martin C. Shifting Paradigms: From Flexner to Competencies. Acad Med. 2002;77(5):361–7.
10. Nousiainen MT, Caverzagie KJ, Ferguson PC, Frank JR. Implementing competency-based medical education: What changes in curricular structure and processes are needed? Med Teach. 2017;39(6):594–8.
11. ten Cate O, Scheele F. Competency-Based Postgraduate Training: Can We Bridge the Gap between. Acad Med. 2007;82(6):542–7.
12. Scheele F, Teunissen P, Luijk S Van, Heineman E, Fluit L, Mulder H, et al. Introducing competency-based postgraduate medical education in the Netherlands. Med Teach. 2008;30:248–53.
13. Scheele F, Van Luijk S, Mulder H, Baane C, Rooyen C Den, De Hoog M, et al. Is the modernisation of postgraduate medical training in the Netherlands successful? Views of the NVMO Special Interest Group on Postgraduate Medical Education. Med Teach. 2014;36:116–20.

14. van Rossum TR, Scheele F, Sluiter HE, Paternotte E, Heyligers IC. Effects of implementing time-variable postgraduate training programmes on the organization of teaching hospital departments. Med Teach. 2018;40(10):1036–41.

15. Ringsted C, Hansen TL, Davis D, Scherpbier A. Are some of the challenging aspects of the CanMEDS roles valid outside Canada? Med Educ. 2006;40:807–15.

16. Holmboe ES, Sherbino J, Englander R, Snell L, Frank JR. A call to action: The controversy of and rationale for competency-based medical education. Med Teach. 2017;39(6):574–81.

17. Van Rossum TR, Scheele F, Scherpbier AJJA, Sluiter HE, Heyligers IC. Dealing with the complex dynamics of teaching hospitals. BMC Med Educ. 2016;16(104).

18. Bank L, Jippes M, Van Rossum TR, Den Rooyen C, Scherpbier A, Scheele F. How clinical teaching teams deal with educational change: 'we just do it.' BMC Med Educ. 2019;

19. Billett S. Constituting the workplace curriculum. J Curric Stud. 2006;38(1):31–48.

20. Bosman P, Baalen M van, Boendermaker A, Vreeman W. Kostprijsonderzoek Opleidingsfonds [Cost price analysis of the educational fund]. Utrecht: Berenschot; 2008.

21. Berden H, Groenewegen N, Baalen M van. Grote verschillen in opleidingskosten [Big differences in educational costs]. Med Contact (Bussum). 2011;66(8):450–2.

22. Chandra A, Khullar D, Wilensky GR. The Economics of Graduate Medical Education. N Engl J Med. 2014;370(25):2357–60.

23. Jippes E, Van Engelen JML, Brand PLP, Oudkerk M. Competency-based (CanMEDS) residency training programme in radiology: Systematic design procedure, curriculum and success factors. Eur Radiol. 2010;20:967–77.

24. Van CanMEDS naar CanBetter: Hoe leid je aios op in algemene competenties? [CanMEDS to CanBetter: How do you train general competenties?]. Utrecht: Royal Dutch Medical Association; 2015.

25. Bank L, Jippes M, Leppink J, Scherpbier AJ, den Rooyen C, van Luijk SJ, et al. Are they ready? Organizational readiness for change among clinical teaching teams. Adv Med Educ Pract. 2017;8:807–15.

26. Lee N van der, Fokkema JPI, Westerman M, Driessen EW, Vleuten CPM van der, Scherpbier AJJA, et al. The CanMEDS framework : Relevant but not quite the whole story. Med Teach. 2013;35(11):949–55.

27. Fokkema JPI, Scheele F, Westerman M, Van Exel J, Scherpbier AJJA, Van Der Vleuten CPM, et al. Perceived effects of innovations in

postgraduate medical education: A Q study focusing on workplace-based assessment. Acad Med. 2014;89:1259–66.

28. Fokkema JPI, Teunissen PW, Westerman M, van der Lee N, van der Vleuten CPM, Scherpbier AJJA, et al. Exploration of perceived effects of innovations in postgraduate medical education. Med Educ. 2013;47:271–81.

29. Rademakers J, Rooij N de, Ten Cate O. Senior medical students ' appraisal of CanMEDS competencies. Med Educ. 2007;41(10):990–4.

30. van Loon KA, Teunissen PW, Driessen EW, Scheele F. Formal Versus Informal Judgments: Faculty Experiences With Entrustment in Graduate Medical Education. J Grad Med Educ. 2018;10(5):537–42.

31. Bonnie L, Visser M, Bont J, Kramer A, Dijk N Van. Education for Primary Care Trainers ' and trainees ' expectations of entrustable professional activities (EPAs) in a primary care training programme. Educ Prim Care. 2019;30(1):13–21.

32. van Loon KA, Teunissen PW, Driessen EW, Scheele F. The Role of Generic Competencies in the Entrustment of Professional Activities: A Nationwide Competency-Based Curriculum Assessed. J Grad Med Educ. 2016;8(4):546–52.

33. Brooks MA. Medical education and the Tyranny of Competency. Perspect Biol Med. 2018;52(1):90–102.

34. Rietmeijer CB, Huisman D, Blankenstein AH, de Vries H, Scheele F, Kramer AW, et al. clinical performance Patterns of direct observation and their impact during residency : general practice supervisors ' views. Med Educ. 2018;52:981–91.

35. Ventres W, Boelen C, Haq C. Time for action: key considerations for implementing social accountability in the education of health professionals. Adv Heal Sci Educ. 2018;23(4):853–62.

36. Rogers. EM. Diffusion of Innovation. 5th ed. New York: The Free Press; 2005.

37. Herzberg F. One more time: How do you motivate employees? Harv Bus Rev. 2003;81(1):3–11.

38. Kogan JR, Conforti LN, Yamazaki K, Iobst W, Holmboe ES. Commitment to Change and Challenges to Implementing Changes after Workplace-Based Assessment Rater Training. Acad Med. 2017;92(3):394–402.

39. Deci E, Ryan R. Handbook of Self-determination Reseach. Rochester, New York: The University of Rochester Press; 2004.

40. van der Burgt SME, Kusurkar RA, Croiset G, Peerdeman SM. Exploring the situational motivation of medical specialists: a qualitative study. Int J Med Educ. 2018;9:57–63.

41. Govaerts MJB. Trust, entrustment decisions and a few things we

shouldn't forget. Perspect Med Educ. 2017;6:68–70.

42. https://www.medischevervolgopleidingen.nl/materialen. Federation of Medical Specialists.